AMENDMENTS TO THE CLAIMS

1. canceled

1 / 2. (currently amended) ~~The~~ An integrated circuit incorporating an Electrostatic Discharge (ESD) protection device ~~according to claim 1~~ comprising:

a semiconductor substrate;

an electrical contact pad;

an ESD switch coupled to the pad and having an active device region formed in the semiconductor substrate; and

a dynamic shock absorbing region formed in the semiconductor substrate adjacent to said active device region, said dynamic shock absorbing region made from a material with thermo-mechanical properties substantially more resistant to shock from dynamic effects of ESD than said active device region, wherein said thermo-mechanical properties include a dynamic loss factor higher than approximately 0.01.

2 / 3. (currently amended) ~~The~~ An integrated circuit incorporating an Electrostatic Discharge (ESD) protection device ~~according to claim 1~~ comprising:

a semiconductor substrate;

an electrical contact pad;

an ESD switch coupled to the pad and having an active device region formed in the semiconductor substrate; and

a dynamic shock absorbing region formed in the semiconductor substrate adjacent to said active device region, said dynamic shock absorbing region made from

a material with thermo-mechanical properties substantially more resistant to shock from dynamic effects of ESD than said active device region, wherein said thermo-mechanical properties further include a melting temperature higher than approximately 800 °K.

3 ~~4.~~ (currently amended) ~~The~~ An integrated circuit incorporating an Electrostatic Discharge (ESD) protection device ~~according to claim 1~~ comprising:

a semiconductor substrate;

an electrical contact pad;

an ESD switch coupled to the pad and having an active device region formed in the semiconductor substrate; and

a dynamic shock absorbing region formed in the semiconductor substrate adjacent to said active device region, said dynamic shock absorbing region made from a material with thermo-mechanical properties substantially more resistant to shock from dynamic effects of ESD than said active device region, wherein said thermo-mechanical properties further include a moderately low stiffness as defined by an elastic modulus approximately in the range of 10 GPa and 100 GPa (Giga Pascals).

4 ~~5.~~ (currently amended) ~~The~~ An integrated circuit incorporating an Electrostatic Discharge (ESD) protection device ~~according to claim 1~~ comprising:

a semiconductor substrate;

an electrical contact pad;

an ESD switch coupled to the pad and having an active device region formed in the semiconductor substrate; and

a dynamic shock absorbing region formed in the semiconductor substrate adjacent to said active device region, said dynamic shock absorbing region made from a material with thermo-mechanical properties substantially more resistant to shock from dynamic effects of ESD than said active device region, wherein said thermo-mechanical properties further include a tensile strength higher than approximately 100 MPa.

12 ~~8.~~ (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 1~~ claims 1 2 3 or 4 ~~2, 3, 4 or 5,~~ wherein the ESD switch has one or more sides, and wherein the dynamic shock absorbing region formed in the semiconductor substrate is located in trenches adjacent to the one or more sides of the ESD switch.

13 ~~7.~~ (currently amended)The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 1~~ claims 1 2 3 or 4 ~~2, 3, 4 or 5,~~ wherein the ESD switch is a transistor.

14 ~~8.~~ (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 1~~ claims 2, 3, 4 or 5, wherein the dynamic shock absorbing region is configured above the active device region.

15 ~~9.~~ (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 1~~ claims 1 2 3 or 4 ~~2, 3, 4 or 5,~~ wherein the dynamic shock absorbing region is configured below the active device region of the ESD switch.

10. (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 1~~ claims ~~2, 3, 4 or 5~~ 1 2 3 or 4, wherein said dynamic shock absorbing region made from a material with thermo-mechanical properties substantially more resistant to dynamic shock than said active device region is selected from the group consisting of hard polymers, amorphous carbon, carbon-carbon composite or carbon-polymer composite.

11. (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 1~~ claims ~~2, 3, 4 or 5,~~ 1 2 3 or 4 wherein said dynamic shock absorbing region is surrounded by a dielectric region.

12. canceled

13. (currently amended) ~~The~~ An integrated circuit incorporating an Electrostatic Discharge (ESD) protection device ~~according to claim 12~~ comprising:

a semiconductor substrate;

an ESD switch having an active device region formed in the semiconductor substrate; and

a plurality of dynamic shock absorbing regions formed around the active device region, said dynamic shock absorbing region made from a material with thermo-mechanical properties substantially more resistant to shock from dynamic effects of ESD than said active device region, wherein said thermo-mechanical properties include a dynamic loss factor higher than approximately 0.01.

14. (currently amended) ~~The~~ An integrated circuit incorporating an Electrostatic

Discharge (ESD) protection device ~~according to claim 12~~ comprising:

a semiconductor substrate;

an ESD switch having an active device region formed in the semiconductor substrate; and

a plurality of dynamic shock absorbing regions formed around the active device region, said dynamic shock absorbing region made from a material with thermo-mechanical properties substantially more resistant to shock from dynamic effects of ESD than said active device region, wherein said thermo-mechanical properties further include a melting temperature higher than approximately 800 °K.

7 15. (currently amended) ~~The~~ An integrated circuit incorporating an Electrostatic Discharge (ESD) protection device ~~according to claim 12~~ comprising:

a semiconductor substrate;

an ESD switch having an active device region formed in the semiconductor substrate; and

a plurality of dynamic shock absorbing regions formed around the active device region, said dynamic shock absorbing region made from a material with thermo-mechanical properties substantially more resistant to shock from dynamic effects of ESD than said active device region, wherein said thermo-mechanical properties further include a moderately low stiffness as defined by an elastic modulus approximately in the range of 10 GPa and 100 GPa (Giga Pascals).

8 16. (currently amended) ~~The~~ An integrated circuit incorporating an Electrostatic Discharge (ESD) protection device ~~according to claim 12~~ comprising:

a semiconductor substrate;

an ESD switch having an active device region formed in the semiconductor substrate; and

a plurality of dynamic shock absorbing regions formed around the active device region, said dynamic shock absorbing region made from a material with thermo-mechanical properties substantially more resistant to shock from dynamic effects of ESD than said active device region, wherein said thermo-mechanical properties further include a moderately high tensile strength higher than approximately 100 MPa.

18 ~~17.~~ (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 12~~ claims 5 6 7 or 8 ~~13, 14, 15 or 16,~~ further comprising a dielectric layer formed in between said ESD switch and said dynamic shock absorbing region.

19 ~~18.~~ (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 12~~ claims 5 6 7 or 8 ~~13, 14, 15 or 16~~ and further comprising a passivation layer formed above said dynamic shock absorbing region.

20 ~~19.~~ (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 12~~ claims 5 6 7 or 8 ~~13, 14, 15 or 16~~, wherein said ESD switch has a gate region ~~and wherein said gate region is~~ formed from a thermo-mechanical energy sink material, and wherein said thermo-mechanical energy sink material is substantially more resistant to thermo-mechanical expansion than the semiconductor substrate.

21
~~20~~. (original) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to claim ~~19~~ 20, wherein said thermo-mechanical energy sink material has physical properties including a high melting temperature higher than approximately 2000 °K.

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~~21~~. (original) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to claim ~~19~~ 20, wherein said thermo-mechanical energy sink material has physical properties further including a high tensile strength higher than approximately 300 MPa.

23
~~22~~. (original) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to claim ~~19~~ 20, wherein said thermo-mechanical energy sink material has physical properties further including a low thermal expansion coefficient lower than approximately 5×10^{-6} $°K^{-1}$.

24
~~23~~. (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 12~~ claims 5 6 7 or 8 ~~13, 14, 15 or 16,~~ further comprising a second dynamic shock absorbing region formed in the semiconductor substrate in thermal contact with said active device region, said second dynamic shock absorbing region made from a material with thermo-mechanical properties substantially more resistant to shock from the dynamic effects of ESD than said active device region.

25
~~24~~. (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to ~~claim 12~~ claims 5 6 7 or 8 ~~13, 14, 15 or 16,~~ wherein the ESD switch has one or more sides, the device further comprising a third

dynamic shock absorbing region located adjacent to the one or more sides of the ESD switch.

25. canceled

9

26. (currently amended) An integrated circuit incorporating an Electrostatic Discharge (ESD) protection device ~~according to claim 25~~ comprising:

a semiconductor substrate;

an ESD circuit comprising a switch having an active device region formed in the semiconductor substrate and one or more passive circuit components; and

means for absorbing dynamic shock from at least one of the switch and one or more passive components in response to an ESD event, wherein said means for absorbing shock comprises a region above the active device region made from a material with thermo-mechanical properties resistant to shock from dynamic effects of ESD, the thermo-mechanical properties including a high material dynamic loss factor higher than approximately 0.01.

26

27. (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to claim ~~25~~ 9 ~~26~~, and further comprising a second dynamic shock absorbing region formed below the active device region, said second dynamic shock absorbing region made from a material with thermo-mechanical properties resistant to shock from the dynamic effects of ESD, the thermo-mechanical properties including a high material dynamic loss factor higher than approximately 0.01.

27 ~~28.~~ (currently amended) The integrated circuit incorporating an Electrostatic Discharge (ESD) protection device according to claim ~~25~~ 26, wherein the ESD switch also has one or more sides, wherein the means for absorbing shock further comprises a third dynamic shock absorbing region formed adjacent to the one or more sides of the ESD switch, said third dynamic shock absorbing region made from a material with thermo-mechanical properties resistant to shock from the dynamic effects of ESD, the thermo-mechanical properties including a high material dynamic loss factor higher than approximately 0.01.

10 ~~29.~~ (currently amended) An integrated circuit incorporating an Electrostatic Discharge (ESD) protection device ~~according to claim 25~~ comprising:

a semiconductor substrate;

an ESD circuit comprising a switch having an active device region formed in the semiconductor substrate and one or more passive circuit components, wherein said ~~ESD~~ switch has a gate region and wherein said gate region is formed from a thermo-mechanical energy sink material, said thermo-mechanical energy sink material being substantially resistant to thermo-mechanical expansion and having physical properties including a low thermal expansion coefficient lower than approximately 5×10^{-6} $°K^{-1}$; and

means for absorbing dynamic shock from at least one of the switch and one or more passive components in response to an ESD event.

11 ~~30.~~ (currently amended) An integrated circuit incorporating an Electrostatic Discharge (ESD) protection device ~~according to claim 25~~ comprising:

a semiconductor substrate;

an ESD circuit comprising a switch having an active device region formed in the semiconductor substrate and one or more passive circuit components, wherein said active device region of said switch is formed from a thermo-mechanical energy sink material, said thermo-mechanical energy sink material substantially resistant to thermo-mechanical expansion and having physical properties including a low thermal expansion coefficient lower than approximately 5×10^{-6} $°K^{-1}$; and

means for absorbing dynamic shock from at least one of the switch and one or more passive components in response to an ESD event.

Claims 31 – 35 (canceled)